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THESIS

AN ECONOMIC ANALYSIS OF RE-LOCATING THE
PHYSICAL EVALUATION BOARD'S FORMAL HEARING
PANEL FROM BETHESDA, MD TO PORTSMOUTH, VA.

by

Terry M. Surdyke and Joseph M. Vitelli

December 2000

Thesis Advisor:
Associate Advisor:

Shu Liao
Doug Moses

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BOARD'S FORMAL HEARING PANEL FROM BETHESDA, MD TO
PORTSMOUTH, VA.

Terry M. Surdyke
Lieutenant Commander, United States Navy
B.S., University of South Carolina, 1987

And

Joseph M. Vitelli
Lieutenant Commander, United States Navy
B.S., United States Naval Academy, 1989

Submitted in partial fulfillment of the
requirements for the degree of

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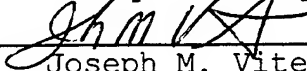
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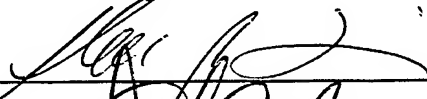


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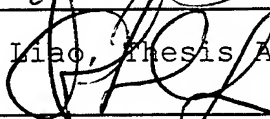
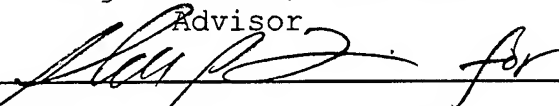


Joseph M. Vitelli

Approved by:



Shu S. Liao, Thesis Advisor


O. Douglas Moses, Associate
Advisor for
Reuben T. Harris, Chairman
Department of Systems Management

ABSTRACT

The Naval Council of Personnel Boards requested an economic analysis of the potential re-location of the their formal Hearing Panel from Bethesda, MD to Portsmouth, VA. The goal of this thesis is to assist the Director, Naval Council of Personnel Boards, by providing a formal economic analysis. OMB Circular A-94 is used as the guideline in conducting this thesis. Therefore, as is prescribed, the net present value model is utilized to present the quantifiable results. In this case, in consideration of the incremental costs and benefits, the net present value of relocating the Hearing Panel is \$403,764. This represents the total net savings that are expected to be realized by moving the hearing panel. Additionally, the analysis indicates the time to recoup the initial investment (payback period) is 1.74 years and the internal rate of return is approximately 57%. Furthermore, there are some other issues (non-quantifiable) that are discussed in this analysis. The quantified results and non-quantifiable issues are presented to assist the decision maker in determining whether or not to relocate the Hearing Panel.

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I. INTRODUCTION

A. BACKGROUND

The Physical Evaluation Board (PEB) implements the Department of Defense (DoD) Disability Evaluation System within the Department of the Navy (DoN). The PEB is comprised of both formal and informal boards. The Informal PEB will perform record reviews of cases referred to the board. No member of the Naval service found Unfit by the Informal PEB may be retired or separated for physical disability without the right to a Formal PEB hearing. Additionally, members of the Naval service found Fit may be granted a formal hearing by the President of the PEB. [Ref. 5] There are two Formal Hearing Panels, one in San Diego, CA and one in Bethesda, MD.

In August of 1999, the Department of the Navy Organization, Management, and Infrastructure Team (DONOMIT) performed a study on the PEB. One of their recommendations was to re-locate the Bethesda Formal Hearing Panel to Portsmouth, VA. Because of the higher fleet concentration in the Tidewater area (greater Norfolk) of Virginia, DONOMIT believed it would be more efficient to re-locate the Formal Hearing Panel to Naval Medical Center (NMC) Portsmouth. Stated simply, they said it is inefficient to require

Sailors and Marines from the Tidewater area, which make up the bulk of the East Coast cases, to travel to National Naval Medical Center (NNMC) Bethesda for a formal hearing.

B. AREA OF RESEARCH

This research primarily evaluates the financial impact of moving the Physical Evaluation Board's Formal Hearing Panel from the National Naval Medical Center Bethesda, MD to Naval Medical Center Portsmouth, VA. The goal is to perform an economic analysis wherein the costs and benefits of staying in Bethesda are compared to the costs and benefits of re-locating to Portsmouth. The objective is to provide the PEB an economic analysis. The research will include gathering relevant data from Bethesda and Portsmouth in order to conduct this detailed economic analysis.

C. RESEARCH QUESTION

The primary research question to be addressed in this thesis is: Is it cost effective to re-locate the PEB's Formal Hearing Panel from Bethesda to Portsmouth?

D. SCOPE OF THESIS

This thesis is a detailed analysis of all incremental costs and benefits associated with re-locating the Formal Hearing Panel from Bethesda to Portsmouth. This thesis is not a review of disability policy or procedures, nor is it a

study of how to make the PEB a more efficient organization. Simply stated, this thesis is limited to whether or not the re-location proposal can be justified in financial terms.

E. METHODOLOGY

The methodology used for this research consisted of the following steps:

(1) Conducted a literature review of SECNAVINST 1850.4D Department of the Navy Disability Evaluation Manual [Ref. 5] to get an understanding of the context within which the re-location decision will be made.

(2) Employed the guidelines of OMB Circular No. A-94, "Guidelines and Discount Rates for Benefit-Cost Analysis of Federal Programs" to perform a detailed analysis of relevant incremental costs related to the re-location proposal. [Ref. 1]

(3) Visited NNMC Bethesda and NMC Portsmouth to conduct interviews and collect data.

(4) Conducted a review of the data gathered toward answering the aforementioned research question.

(5) Quantified, listed and discussed all incremental costs associated with re-locating the Hearing Panel to Portsmouth through a series of interrelated spreadsheets.

(6) Summarized the incremental costs.

(7) Discussed "other issues" (not quantified) to enable a more informed decision on a possible re-location.

F. ORGANIZATION OF STUDY

The thesis begins with an introductory chapter that illuminates the background associated with the research question. Next the thesis discusses and details the incremental cost analysis of all quantifiable incremental costs. Then the thesis presents a discussion of non-financial issues that may be pertinent to the relocation decision. Finally, the thesis concludes with a brief summary.

II. INCREMENTAL COST ANALYSIS

A. INTRODUCTION

OMB Circular No. A-94 provides general guidance for conducting benefit-cost and cost-effectiveness analyses. The guidelines in this circular apply to any analysis used to support Executive Branch decisions to initiate, renew, or expand programs or projects which would result in a series of measurable benefits or costs extending for three or more years into the future. Its goal is to promote efficient resource allocation through well-informed decision-making by the Federal Government. It also provides specific guidance on the treatment of inflation, the discount rate to be used, sensitivity analysis and the utilization of net present value and incremental cost analysis. OMB Circular No. A-94 is therefore the primary guidance for this analysis.

Through a series of spreadsheets, this chapter will compare the incremental costs of relocating the Hearing Panel from Bethesda to Portsmouth. Costs herein are with respect to the Navy and are not limited to costs to the Physical Evaluation Board (PEB). Incremental costs are those items that will change if the Hearing Panel is relocated to Portsmouth NMC. Since only two alternatives are being considered, the incremental cost approach offers a

simpler and more direct route to a decision. The procedure is to include in the discounted cash flow analysis only those costs and revenues that differ between the two alternatives being considered. This incremental cost procedure is required in economic analysis of Federal Programs. [Ref. 1:p. 5] If relocating saves the Navy money, the analysis will identify those dollar amounts as "savings". If relocating costs the Navy more money, the analysis will identify those dollar amounts as "excess".

Sensitivity analysis will be performed because the input data to the spreadsheets only approximate future reality. Additionally, OMB Circular No. A-94 [Ref. 1] requires sensitivity analysis on major assumptions. The sensitivity of the analysis to changes in this data will be discussed where applicable.

The following sections will describe the various incremental costs and revenues associated with the relocation from Bethesda to Portsmouth.

B. INITIAL NON-RECURRING INVESTMENT

1. Introduction

If the Hearing Panel is relocated to Portsmouth, there is an initial one-time investment to physically move the Hearing Panel and its staff to Portsmouth. The Hearing Panel is comprised of four 06s. Support staff includes 2

O3s (JAG Officers) and 2 civil servants. Figure 1 depicts that this investment includes costs such as moving household goods, personnel travel cost, moving office goods, Video reproduction and downtime costs.

Note that one of the civil servants has indicated that she would not move to Portsmouth and would elect instead to transfer to another job within the DC area. Therefore, an employee would need to be hired in Portsmouth. However, this initial non-recurring investment does not include the cost to hire and train this new employee. This cost is not incremental because the support structure to hire and train new employees already exists with an assumed excess capacity sufficient to hire and train one employee at little or no additional cost.

Construction of the new NMC hospital at Portsmouth is completed. Therefore, there is currently a lot of space available in the old NMC hospital. Most of this space is ready for occupancy, but some of it would require a build out charge of \$40/sq ft. The longer it takes to actually re-locate the Hearing Panel, the more likely there would be a build out charge because other new tenants are occupying the spaces that do not require a build out charge. The build out charge for a 5007 square foot space is \$200,280. This analysis does not include the build out charge because

Initial Investments

Household Goods Moving Cost

Grade	Number	Cost per	Total
O6	4	\$7,862	\$31,450
O3	2	\$6,413	\$12,827
GS	1	\$7,862	\$7,862

\$52,139

Personnel Travel Cost

Grade	Number	Cost per	Total
O6	4	\$2,807	\$11,227
O3	2	\$2,026	\$4,052
GS	1	\$12,210	\$12,210

\$27,489

Office Goods Moving Cost

\$10,300

NLSO Rights Video Reproduction

\$5,000

Downtime Cost

\$30,760

Total Initial Investment

\$125,688

Sensitivity (Varies Dependents for travel Costs/includes Build-out Charge)

Grade	Number	Lower Limit		Upper Limit	
		Cost per	Total	Cost per	Total
O6	4	\$2,222	\$8,887	\$2,896	\$11,585
O3	2	\$1,612	\$3,225	\$2,128	\$4,256
GS	1	\$2,550	\$2,550	\$41,475	\$41,475
Sub-total Travel			\$14,662		\$57,316
Build-out Charge					\$200,280
Total Initial Investment			\$112,860		\$355,795

Figure 1. Initial Investment.

Portsmouth Facilities Management indicated that they have a lot of "occupiable" spaces that do not require a build out charge and this condition would remain the same in the foreseeable future. However, if the relocation is delayed significantly the build out charge could, although unlikely, represent a significant increase to the initial investment. This possible increase in the initial investment is shown in Figure 1 as part of the upper limit of the "Initial Investment Sensitivity Analysis."

2. Household Goods Cost

If the Hearing Panel is relocated to Portsmouth, the staff is entitled to compensation for shipment of household goods in accordance with the Joint Travel Regulations [Ref. 2] and the Joint Federal Travel Regulations. [Ref. 3] As stated, one of the civil servants would remain in the DC area. Therefore, there is no household goods cost associated with that particular civil servant. As depicted in Figure 1, Initial Investments, there is a substantial cost to move these personal household goods. In accordance with the applicable Military Traffic Management Command rate solicitation [Ref. 4], O6s and civil servants are authorized to move 18,000 pounds and the O3s are authorized to move 14,500 pounds of personal household goods. It will cost a maximum of \$7,862 to move the household goods of each O6 and

the civil servant. It will cost a maximum of \$6,413 to move the O3s household goods. The Personal Property Office at the Naval Postgraduate School Monterey verified the computation of these costs. The maximum total cost to move household goods is \$52,139.

3. Permanent Change of Station Travel Cost

If the Hearing Panel is relocated to Portsmouth, there are personnel travel and Permanent Change of Station per diem costs. [Figure 1.] These costs include relocating the dependents, if any, of the hearing panel. With regard to the military members, the calculation assumes that they are married with two dependents, one younger and one older than 12 years old. With regard to the civil servant, the calculation assumes that he/she is married with two dependents, one younger and one older than 12 years old and that it takes the employee 60 days to find a residence in Portsmouth. Whether military or civil servant, the age of 12 is applicable in that a higher rate is applied to those dependents over 12 when computing travel costs. The cost per military member was verified by the Disbursing Office Monterey using the standard rates effective July 2000. The Director of Human Resources Monterey verified the cost of the civil servant. Sensitivity Analysis was performed on these costs since an assumption of the number of dependents

was used in the calculation. The lower limit of the sensitivity analysis assumes the staff members are not married (zero dependents), and the upper limit assumes 6 total dependents, three over 12 and three less than 12 years old. Further, with regard to the civil servant, the lower limit assumes that it takes this employee 30 days to find a residence. The upper limit assumes that it takes 120 days to find a residence. These assumptions, including the upper and lower limits, are reasonable. Specifically, also note that the total difference between the upper and lower limit of personnel travel costs is \$42,654.

4. Office Goods Cost

If the Hearing Panel is relocated to Portsmouth, the office goods must be moved. These office goods include such things as files, computers, desks, etc. The \$10,300 estimate of this cost was provided by Office Movers Inc. of Alexandria, Va., as is depicted in Figure 1. This professional moving company performed an on-site estimate at Bethesda. Therefore, the estimate is realistic.

5. Video Reproduction Cost

Another cost associated with relocating to Portsmouth is the reproduction of a Naval Legal Service Office Rights Video. This is an instructional video that helps those with a scheduled hearing understand the hearing process. This

video is currently tailored to Bethesda and would therefore have to be re-done at a cost of \$5,000. The Naval Legal Service Office provided this cost estimate during an interview. The estimate was based on the cost to produce the current version.

6. Hearing Panel Downtime Cost

Another non-recurring cost is the cost associated with the fact that the Hearing Panel will be unable to conduct hearings during the move to Portsmouth. According to PEB data, roughly 50% of the active duty hearings result in a finding of "unfit". Assuming the Hearing Panel is unable to conduct hearings during the actual move from Bethesda to Portsmouth, this delays the transfer of these "unfit" personnel from active duty status to disability status. The Hearing Panel Senior Administrator indicated that this transfer would keep the Hearing Panel down for approximately 30 days. This analysis therefore assumes a delay of 30 days. Further, it assumes that these personnel are married, E-5s, over 6 years of total service and 3 years of sea-service. Finally, the analysis assumes that these unfit active duty members would be transferred to the disability list receiving approximately 50% of their base pay. These assumptions are made to simplify the analysis and are reasonable.

A weighted average of FY 98/99/00 actual active duty hearing data indicates that on average approximately 31 active duty members appear before the Hearing Panel each month. The PEB indicates that approximately 50% of Hearings result in a finding of "unfit". Therefore, approximately 16 active duty members could potentially be delayed from being transferred from active duty status to disability because their hearings are delayed 30 days due to the downtime associated with the move. This delay would cost the Navy the difference between active duty pay and disability pay for these members. Given the above assumptions and calculations, Figure 1 indicates this cost as \$30,760.

7. Summary

Given all the above, the most likely total initial investment is \$125,688. The lower limit is \$112,860 and the upper limit is \$355,795.

C. FUTURE RECURRING COSTS

1. Airline Cost

Another incremental cost to be analyzed if the Hearing Panel is relocated to Portsmouth is the cost of flying service members to the location of the Hearing Panel. In accordance with SECNAVINST 1850.4D [Ref. 5], service members are entitled to travel when they appear before the Hearing Panel. Service members, in this case, include both active

duty and members on the Temporary Disability Retired List (TDRL). TDRLs are personnel who have been determined unfit for Naval service because of physical disability, who meet the requirements for disability retirement, and whose disabilities are not yet determined to be permanent. SECNAVINST 1850.4D [Ref. 5:p. 35] requires that TDRL members shall be given a physical re-examination at least every 18 months up to the 5-year point. As a result of this re-examination, some members may be entitled to a Formal PEB hearing. Most of the TDRLs do not reside within the practicable driving distance of Bethesda, therefore those entitled to a hearing must fly to Bethesda. Only TDRLs that live in Maryland or Virginia are assumed to be within practicable driving distance.

A random sample of 135 TDRL files was evaluated to determine where TDRL members come from. Based on the stated assumption that members from Virginia and Maryland do not fly, 22 members were subtracted thereby reducing the sample size. Additionally, FY 98 and FY99 active duty data was analyzed to determine from where they fly. This effectively increased the sample size by nine to the final total of 122. As seen on Figure 2, this sample size is 23.3% of the total projected number of fliers per year. The incremental cost is the cost to fly either to the DC area (Reagan

Airline Cost Comparison - DC vs. Norfolk

City/State	Fliers	Probability of Flights	Norfolk Price	DC Price	Savings or (Excess) per Flight	Savings or (Excess) × Sample Flights	Savings or (Excess) × Projected Flights
Jax/FL	24	19.7%	\$162	\$150	(\$12)	(\$288)	(\$1,235)
Boston/MA	4	3.3%	\$135	\$166	\$31	\$124	\$532
Cleveland/OH	10	8.2%	\$190	\$88	(\$102)	(\$1,020)	(\$4,373)
Raleigh/NC	11	9.0%	\$104	\$88	(\$16)	(\$176)	(\$754)
Phil/PA	5	4.1%	\$238	\$99	(\$139)	(\$695)	(\$2,979)
Detroit/MI	8	6.6%	\$255	\$109	(\$146)	(\$1,168)	(\$5,007)
Nashville/TN	6	4.9%	\$255	\$136	(\$119)	(\$714)	(\$3,061)
Newark/NJ	4	3.3%	\$183	\$102	(\$81)	(\$324)	(\$1,389)
Portland/ME	3	2.5%	\$178	\$208	\$30	\$90	\$386
Birmingham/AL	5	4.1%	\$255	\$164	(\$91)	(\$455)	(\$1,951)
Atlanta/GA	6	4.9%	\$108	\$118	\$10	\$60	\$257
St. Louis/MO	1	0.8%	\$250	\$160	(\$90)	(\$90)	(\$386)
Chicago/IL	6	4.9%	\$263	\$156	(\$107)	(\$642)	(\$2,752)
Milwaukee/WI	2	1.6%	\$255	\$198	(\$57)	(\$114)	(\$489)
New Orleans/LA	1	0.8%	\$162	\$138	(\$24)	(\$24)	(\$103)
Gulfport/MS	1	0.8%	\$184	\$158	(\$26)	(\$26)	(\$111)
Ind/IND	1	0.8%	\$255	\$118	(\$137)	(\$137)	(\$587)
New York/NY	6	4.9%	\$183	\$98	(\$85)	(\$510)	(\$2,186)
San Juan/PR	3	2.5%	\$599	\$599	\$0	\$0	\$0
Columbia/SC	5	4.1%	\$186	\$170	(\$16)	(\$80)	(\$343)
Rutland/VT	1	0.8%	\$258	\$278	\$20	\$20	\$86
Louisville/KY	2	1.6%	\$202	\$110	(\$92)	(\$184)	(\$789)
Morgantown/WV	1	0.8%	\$254	\$248	(\$6)	(\$6)	(\$26)
Phoenix/AR	1	0.8%	\$421	\$198	(\$223)	(\$223)	(\$956)
New London/CT	1	0.8%	\$249	\$158	(\$91)	(\$91)	(\$390)
Providence/Ri	1	0.8%	\$174	\$88	(\$86)	(\$86)	(\$369)
Naples/Italy	1	0.8%	\$328	\$293	(\$35)	(\$35)	(\$150)
Corpus/TX	1	0.8%	\$321	\$320	(\$1)	(\$1)	(\$4)
Seville/ES	1	0.8%	\$449	\$341	(\$108)	(\$108)	(\$463)
						<u>(\$6,903)</u>	<u>(\$29,592)</u>

		Norfolk	DC	Savings or (Excess)
Sample Totals	122	\$25,043	\$18,140	(\$6,903)
Sample Percentage	23.3%			
NNMC Fliers/year =	523	\$107,356	\$77,764	(\$29,592)

Sensitivity Analysis

NNMC Fliers/year Lower Limit	418	(\$23,651)
NNMC Fliers/year	523	(\$29,592)
NNMC Fliers/year Upper Limit	628	(\$35,533)

Figure 2. Airline Cost Comparison.

International Airport) or Norfolk (Norfolk Airport). To determine which airport they fly from and estimate this incremental cost, the locations were tallied in order to determine a frequency distribution of locations. These frequencies are reflected in the "probability of flights" column of Figure 2. For example, it is estimated that 19.7% of all fliers per year will fly from Florida (to simplify the analysis, the airline rate was based on leaving from Jacksonville and this same simplifying assumption was used on other states in this analysis of airline costs). Note here that not only do most TDRLs fly in for a hearing, but also a small number of active duty members fly in for a hearing. Two years worth of data (FY99 and FY00) indicated that there are 591 total actual TDRL hearings per year, 481 of these hearings are for TDRL members who fly in for a hearing. These numbers of fliers were calculated by taking a weighted average from actual data with FY00 (thru Mar 00) weighted two and FY99 weighted one. (See Figure 5 Applicable Personnel section for calculation) Further, three years worth of data (FY98, FY99, and FY00 thru Mar 00) indicate that 42 (42 out of the total of 380 active duty hearings per year) active duty members fly in for a hearing per year. This yields a total of 523 fliers per year.

Airline prices were checked via the Saber database in order to ascertain the cost of flying into either DC or Norfolk from the various locations. The Saber database was used because it is the database utilized by Navy Travel Offices. These prices are reflected in the "Norfolk Price" and "DC Price" columns. The incremental price difference is reflected in the "Savings or Excess per flight" column. These savings/excesses are then applied to the sample to yield the "Savings or Excess X Sample Flights" column. Based on the fact that the sample is 23.3% of the total fliers per year, the sample savings/excesses are divided by 23.3% to yield the "Savings/Excess X Projected Flights" column. The total of this column is the total projected annual incremental airline cost of moving to Portsmouth. Thus, if the Hearing Panel is relocated to Portsmouth it will cost \$29,592 more per year in airline costs.

Sensitivity Analysis was performed because the historical data used to determine the total number of fliers is assumed to be a projection of future fliers. The limits are +/- 20% of the total projected fliers.

2. Office Cost

Another incremental cost to be analyzed if the Hearing Panel is relocated to Portsmouth is the cost of the 5,007 square feet of office space occupied by the Hearing Panel.

Portsmouth Facilities Management indicated that there would probably be space available at the Portsmouth NMC to accommodate the Hearing Panel. This incremental cost includes utilities (electric, water, steam, sewage, etc) and custodial services. This analysis assumes that the space **not** occupied by the Hearing Panel, whether Portsmouth or Bethesda, would otherwise be occupied by another Navy activity. Therefore, there is no calculation for any opportunity costs due to differential capacity constraints.

The incremental office costs that are part of the analysis herein are utilities and custodial services as depicted in Figure 3.

Office Cost Comparison • Portsmouth vs. Bethesda

	NMC Portsmouth	NNMC Bethesda	Savings or (Excess)
Utilities	\$ 9,860	\$ 24,000	\$ 14,140
Custodial	8,563	12,000	3,437
Annual Totals	\$ 18,423	\$ 36,000	\$ 17,577

Annual Savings or (Excess)	\$ 17,577
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Figure 3. Office Cost Comparison.

At NNMC Bethesda, utilities cost approximately \$24,000/year and custodial services cost \$12,000/year. At NMC Portsmouth, utilities are estimated to cost \$9,860/year and

custodial services are estimated to cost \$8,563/year. The Facilities Management Department of NMC Portsmouth, using current rates, provided the NMC Portsmouth estimations. Therefore, the total annual office cost savings if the Hearing Panel is relocated to Portsmouth is \$17,577.

3. Living Costs

Another incremental cost to be analyzed if the Hearing Panel is relocated to Portsmouth is the difference in pay for both the military and civilian staff members. With regard to the military, the only portion of their pay that would differ is Basic Allowance for Housing (BAH). Figure 4 details the applicable Defense Finance and Accounting Service BAH rates for the military. This cost is significantly less in Portsmouth. The difference in BAH for the 06s is \$503/month and the difference for the 03s is \$405/month. The total savings is \$33,864/year for military BAH. With regard to civilian pay, there is a minimal difference in overall pay according to the standard civilian pay schedule. There is only a \$1,239/year savings.

Therefore, the total annual living cost savings if the Hearing Panel is relocated to Portsmouth is \$35,103.

4. Per Diem Costs

Another incremental cost to be analyzed if the Hearing Panel is relocated to Portsmouth is the difference in the

Living Cost Comparison • Portsmouth vs. Bethesda

Military Basic Allowance for Housing

Monthly Rates				
Number	Grade	Portsmouth	Bethesda	Savings or (Excess)
4	06	\$ 1,166	\$ 1,669	\$ 503
2	03	\$ 892	\$ 1,297	\$ 405
Monthly Totals =		\$ 6,448	\$ 9,270	\$ 2,822
Annual Totals =		\$ 77,376	\$ 111,240	\$ 33,864

Civilian Pay

Annual Rates				
Number	Grade/Step	Portsmouth	Bethesda	Savings or (Excess)
1	GS 8/5	\$ 35,476	\$ 36,230	\$ 754
1	GS 5/1	\$ 22,819	\$ 23,304	\$ 485
Annual Totals =		\$ 58,295	\$ 59,534	\$ 1,239

Military and Civilian Annual Totals	\$ 135,671	\$ 170,774	\$ 35,103
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Figure 4. Living Cost Comparison.

per diem costs associated with members traveling for their hearing. Since Portsmouth is a lower cost of living area than the DC area, there are substantial savings to the Navy in per diem costs if the Hearing Panel is relocated. This is compounded by the fact that most Hearing Panel cases originate in Portsmouth. Therefore, if the Hearing Panel were relocated to Portsmouth, these members would not receive per diem at all since they are already assigned to the Portsmouth area.

As depicted in Figure 5 "Per Diem Cost Comparison", both the lodging and meals and incidental expenses (M&IE) portions of the per diem rates are less in Portsmouth than in Bethesda. Note that since Portsmouth is located near a summer tourist location, Virginia Beach, there are different summer and winter lodging rates. An average of these rates was used in the calculations because actual historical data does not suggest any seasonal pattern in number of cases and season. The "Applicable Personnel Section" depicts to whom the above rates apply. The "location" column shows from where active duty cases originated for a hearing in Bethesda. For all active duty members, a three year weighted average was used based on actual historical data to predict future hearing panel cases. FY00 was given a weight of three, FY99 a weight of two and FY98 a weight of one. For

Per Diem Difference • Portsmouth vs. Bethesda

Per diem Rates		Total	Lodging	M&IE			
Bethesda		\$164.00	\$118.00	\$46.00			
Portsmouth May-Sept		\$147.00	\$109.00	\$38.00			
Portsmouth Oct - Apr		\$93.00	\$55.00	\$38.00			
Portsmouth Average		\$115.50	\$82.00	\$38.00			
Applicable Personnel					E7 & Above Percentage 10%		
Location of Origin		FY 98	FY 99	FY 00 **	Weighted Avg	E7 and Above E6 and Below	
		1	2	3			
Camp Lejeune/Cherry Pt		71	60	62	63	6	57
Quantico		12	18	14	15	2	14
Miscellaneous		63	23	20	28	3	25
Portsmouth		333	180	246	239	24	215
Bethesda		107	31	14	35	4	32
TDRLs			303	735	591	591	
* Incremental Difference		** Projected for FY 2000 Based on Actual Data through March 2000					
Bethesda		Portsmouth					
Location of Origin		E7 and Above E6 and Below		E7 and Above E6 and Below		E7 and Above E6 and Below	
Camp Lej/Cher Pt		6	57	Camp Lej/Cher Pt		6	57
Quantico		2	14	Quantico		2	14
Misc		3	25	Misc		3	25
Portsmouth		24	215	Bethesda		4	32
TDRL		591	0	TDRL		591	
Total		625	310	Total		605	127
Lodging Rate		\$118.00		Lodging Rate		\$82.00	
Lodging Days		1		Lodging Days		1	
M&IE		\$46.00	\$46.00	M&IE		\$38.00	\$38.00
Travel Days		2	2	Travel Days		2	2
Two Day M&IE Rate		75%	75%	Two Day M&IE Rate		75%	75%
Cost		\$116,959.15	\$21,393.45	Cost		\$84,111.22	\$7,241.85
Total Cost			\$138,352.60	Total Cost			\$91,353.07
Annual Per Diem Savings / (Excess)		\$46,999.53					

Figure 5. Per Diem Cost Comparison.

TDRLs a two- year (FY00 weight two, FY99 weight one) vice three year weighted average was used because FY98 data was not available. For both active duty and TDRL personnel, FY00 was given the most weight because interviews with PEB and Hearing Panel personnel indicated that the more recent data is more likely to reflect future cases. This section also breaks down the predicted personnel into two categories, E6 and below and E7 and above. Actual historical data indicates that 10% of the hearing panel cases are E7 and above with the remaining 90% being E6 and below. E6 and below personnel that travel for a hearing are berthed in the Bachelor's Enlisted Quarters (BEQ). The PEB currently pays the BEQ a flat rate to set aside rooms for incoming E6 and below cases. Based on interviews with BEQ management in Portsmouth, this cost is not incremental because Portsmouth can set up the same arrangement. However, it is important to the analysis because the difference in lodging rates between the two areas is therefore only applicable to E7 and above personnel.

The headings "Bethesda" and "Portsmouth" in Figure 5 show the applicable per diem rates applied to the applicable personnel. The "Bethesda" section shows the total annual per diem cost with the Hearing Panel located in Bethesda. The "Portsmouth" sections show the total annual per diem

cost with the Hearing Panel located in Portsmouth. These calculations are based on the facts that hearings include 2 days of travel (one night of lodging) and the lodging rate is not applicable to E6 and below personnel. Also, in accordance with the Joint Federal Travel Regulations [Ref. 3], the reimbursement for the M&IE portion of per diem is 75% of the total M&IE rate on days of travel. Since there are only two days of travel the 75% rate is applicable to the M&IE of both days. The annual per diem cost with the Hearing Panel in Bethesda is \$138,352.60. The annual per diem cost if the Hearing Panel is relocated to Portsmouth would be \$91,353.07. Therefore, the annual incremental savings of relocating the Hearing Panel to Portsmouth are \$46,999.53.

5. Rental Car Costs

Another incremental cost to be analyzed if the Hearing Panel is relocated to Portsmouth is the cost difference for the personnel who drive to the Hearing Panel. The PEB Travel Coordinator indicated that because it is cheaper for these drivers to rent a car than it is to drive their own vehicle, virtually all drivers rent a car for their trip to the Hearing Panel. However, incremental analysis is only applicable to some of these drivers. It is not applicable to those that drive from areas other than Portsmouth and

Bethesda because these personnel have to rent cars regardless of whether or not the Hearing Panel is re-located. Fuel costs were also considered in this regard, but were not deemed incremental. If the Hearing Panel were to be relocated to Portsmouth, some of these drivers would now be closer to the Hearing Panel, but some would be further from the Hearing Panel. Therefore, there may be no cumulative differential driving distance, and therefore no incremental fuel costs, as some drivers are further and some are closer to the Hearing Panel. This analysis assumes there are no incremental fuel costs because even if there were a differential driving distance the incremental fuel cost would be small and deemed not worth the effort to exactly calculate. After all, these drivers originate from numerous locations throughout Maryland and Virginia and from where these drivers originate changes each year. On the other hand, incremental analysis is applicable to those that drive from the Portsmouth area and the DC area. Recall from Figure 5 that approximately 239 active duty members per year from Portsmouth require a hearing, as compared to only 35 members per year from the DC area that require a hearing. If the Hearing Panel is moved to Portsmouth the 239 members from Portsmouth will not need to rent a car, but the 35 members from the DC area will need to rent a car to travel

to Portsmouth. Figure 6 depicts the incremental cost of these additional rentals. It also takes into account the different rates associated with renting a car in Portsmouth or Bethesda. As previously mentioned the roundtrip travel for a hearing is 2 days. These rates were retrieved from the SABER database used by military travel offices. The total annual rental car savings if the Hearing Panel is relocated to Portsmouth is \$10,365.37.

Rental Car Cost Comparison • Portsmouth vs. Bethesda

	Bethesda	Portsmouth
Rate	\$25.71	\$26.99
Days	2	2
Renters Per Year	239	35
Annual Cost	\$12,263.67	\$1,898.30
Annual Rental Car Savings/(Excess)		\$10,365.37

Figure 6. Rental Car Cost Comparison.

6. Conference Costs

Currently, there is an annual 5-day conference that is held in the DC area. Attendees include the San Diego and Bethesda Hearing Panels as well as select PEB members. Interviews with PEB personnel indicate that the location will remain in the DC area even if the Hearing Panel is relocated to Portsmouth. Therefore, the only incremental cost if the Hearing Panel is relocated to Portsmouth is the cost of travel and per diem for the Portsmouth Hearing Panel

to attend the conference in the DC area. Figure 7 details the calculation of these costs. Specifically, there is the DC area per diem cost for the 6 Hearing Panel staff members for the duration of the conference which totals to \$5,058. Additionally, there is the MALT cost. MALT is the mileage allowance to drive a privately owned vehicle. In this case the rate of \$.325/mile is applicable to a TAD site. This calculation assumes that Hearing Panel members would drive their own vehicle, which is the most likely scenario. The total annual cost is \$5,865.30.

Sensitivity analysis was performed because of the assumption that all Hearing Panel members would drive their own cars. This may not be the case. The lower limit assumes that all Hearing Panel staff members would travel together in one rental van. In this case the total cost would be \$5,475.57. The upper limit assumes that each Hearing Panel member would rent a car and drive separately. The total upper limit cost is \$6,088.50.

7. Supervisory Travel Cost

The President of the Physical Evaluation Board (PPEB) and the Director, Naval Council of Personnel Boards (DNCPB) occasionally travel to the Bethesda Hearing Panel. These are unfunded trips since the Hearing Panel is in close proximity. If the Hearing Panel is relocated to Portsmouth

Annual Conference Cost Comparison

Per Diem

Hearing Panel Staff Members	6	
Bethesda Lodging Rate	\$118	
Lodging Days	5	
M&IE Rate	\$46	
75% Rate	\$35	
75% M&IE Days	2	
Full M&IE Days	4	
Annual Conference Per Diem Savings/(Excess)		(\$5,058)

Malt

Hearing Panel Staff Members	6	
Round Trip Miles	414	
Malt rate per Mile	\$0.325	
Annual Conference Malt Saving/(Excess)		(\$807.30)

Total Annual Conference Savings/(Excess)

(\$5,865.30)

Sensitivity Analysis

	Lower Limit	Upper Limit
Conference Days	5	5
Hearing Panel Staff members	N/A	6
Rental Car Rate	\$69.11	\$25.71
Fuel	\$72.00	\$259.20
Sub-total	(\$417.57)	(\$1,030.50)
Total Annual Conference Savings/(Excess)	(\$5,475.57)	(\$6,088.50)

Figure 7. Annual Conference Cost Comparison.

these trips would now become funded travel. The PPEB indicates that he would travel to Portsmouth six times per year. The DNCPB indicates that he would travel to Portsmouth two times per. As is depicted in Figure 8, these trips would cost \$2,310.46/year.

PPEB & DNCPB Travel

	PPEB	DNCPB
# Lodging Days	2	2
Lodging Rate	\$82.00	\$82.00
Full M&IE Days	1	1
Partial M&IE Days	2	2
M&IE Rate	\$38.00	\$38.00
Partial M&IE Rate	\$28.50	\$28.50
Fuel Cost per Trip	\$29.81	\$29.81
Cost per Trip	\$288.81	\$288.81
# Trips per Year	6	2
Sub-total	\$1,732.85	\$577.62
Total Annual Savings/(Excess)		(\$2,310.46)

Figure 8. PPEB & DNCPB Travel

8. Summary

The Summary spreadsheet, Figure 9, summarizes all the annual incremental costs associated with the relocation to Portsmouth. The standard criterion for deciding whether a government program can be justified on economic principles is net present value, which is the discounted monetized value of expected net benefits (i.e. benefits minus costs). Net present value is computed by assigning monetary values

Summary Cost Comparison **For Move from Bethesda to Portsmouth**

	Annual Costs		Savings or (Excess)
	Portsmouth	Bethesda	
Airline Costs	\$107,356.47	\$77,764.10	(\$29,592.37)
Office Costs	\$18,423.00	\$36,000.00	\$17,577.00
Living Costs	\$135,671.00	\$170,774.00	\$35,103.00
Per Diem Costs	\$91,353.07	\$138,352.60	\$46,999.53
Rental Car Costs	\$1,898.30	\$12,263.67	\$10,365.37
Conference Costs	\$5,865.30	N/A	(\$5,865.30)
PPEB & DNCPB Travel Costs	\$2,310.46	N/A	(\$2,310.46)
Net Annual Savings / (Excess)			\$72,276.77
Number of Years			10
Discount Rate			6.1%
Present Value of Annual Savings			\$529,452.09
Initial Investment			(\$125,687.64)
Net Present Value of the Move			\$403,764.45
Payback Period	1.74		
Internal Rate of Return	56.87%		

Sensitivity Analysis

	Lower Limit	Upper Limit
Airline	(\$35,533.48)	(\$23,651.26)
Conference	(\$6,088.50)	(\$5,475.57)
Net Annual Savings	\$66,112.47	\$78,607.61
Number of Years	10	10
Discount Rate	6.1%	6.1%
Present Value of Annual Savings	\$484,296.44	\$575,827.64
Initial Investment	(\$355,795.06)	(\$112,860.36)
NPV of the Move	\$128,501.38	\$462,967.28
Payback Period	5.38	1.44

Figure 9. Summary Cost Comparison.

to benefits and costs, discounting future benefits and costs using an appropriate discount rate, and subtracting the sum total of discounted costs from the sum total of discounted benefits. Discounting benefits and costs transforms gains and losses occurring in different time periods to a constant dollar basis. Programs with positive net present value increase social resources and are generally preferred. Programs with negative net present value represent a financial burden to the society if adopted.

As depicted in Figure 9, the most likely net annual savings of re-locating the Hearing Panel to Portsmouth are \$72,276.77. Inflation is not incremental to this analysis because the rate of inflation should be approximately the same in both DC and Portsmouth, and because the OMB Circular [Ref. 1] recommends avoiding having to make an assumption about the general rate of inflation whenever possible. Additionally, there are no identifiable trends that would incrementally change the data used in this analysis into the foreseeable future. Therefore, the net annual savings of \$72,276.77 should remain the same throughout the period of analysis. This period of analysis is 10 years as requested by the PEB.

Appendix C of the OMB Circular [Ref. 1] lists 6.1% as the appropriate nominal discount rate for a 10-year period.

This discount rate is based on the most current economic assumptions from the Federal Budget and is valid through the end of January 2001. Applying the 6.1% discount rate over a 10-year period to the \$72,276.77 in annual savings yields a present value of 529,452.09. Since the most likely initial investment of \$125,687.64 is at time zero it does not require discounting. Subtracting the initial investment from the present value of the annual savings yields the most likely net present value of the move, \$403,764.45. Based on the annual savings of \$72,276.77, it would take 1.74 years to payback the initial investment of \$125,687.64.

Figure 9 includes sensitivity analysis. This summary sensitivity analysis encompasses all underlying sensitivity analysis discussed previously. Specifically, sensitivity analysis was discussed with regard to airline costs, conference costs and the initial investment. The lower limit in this case is the lower limit of the net present value of the move. Therefore, this calculation captures the underlying assumptions that make the move look financially less attractive. The lower limit net present value is projected to be \$128,501 with a payback period of 5.38 years. These figures are significantly different than the most likely figures mentioned above primarily because the lower limit includes the one time build-out charge discussed

previously. The upper limit captures the underlying assumptions that make the move look the most attractive. The upper limit net present value is projected to be \$462,967 with a payback period of 1.44 years.

Figure 9 also includes the Internal Rate of Return (IRR) of 56.87% as a reported outcome. The internal rate of return is the discount rate that sets the net present value of the relocation to zero. As stated in the OMB Circular [Ref. 1], the IRR does not generally provide an acceptable decision criterion, but it does provide useful information. Figure 10 proves that applying a discount rate of 56.87% sets the net present value to zero.

Discounted Cash Flow Analysis

End of Year		Net cash flows with no inflation	Present Value of net cash flows discounted at IRR rate of	
			Discounted 6.10%	56.868%
0	Initial Investment	(125,688)	(125,688)	(125,688)
1	Net annual savings	72,277	68,121	46,075
2	Net annual savings	72,277	64,205	29,372
3	Net annual savings	72,277	60,514	18,724
4	Net annual savings	72,277	57,034	11,936
5	Net annual savings	72,277	53,755	7,609
6	Net annual savings	72,277	50,665	4,851
7	Net annual savings	72,277	47,752	3,092
8	Net annual savings	72,277	45,007	1,971
9	Net annual savings	72,277	42,419	1,257
10	Net annual savings	72,277	39,980	801
Total		597,080	403,764	0

Figure 10. Internal Rate of Return.

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III. OTHER ISSUES

A. NAVY LEGAL SERVICE OFFICE SUPPORT

As mentioned, support staff for the Hearing Panel includes two O3 Judge Advocate General (JAG) officers. Currently, these two officers are temporarily detailed from the Naval Legal Service Office (NLSO) Washington Navy Yard to the Bethesda Hearing Panel for duty. These two officers actually work on site at the Hearing Panel in Bethesda for six months at a time. Who will provide this legal support if the Hearing Panel is re-located to Portsmouth? Based on interviews with the PEB, the Commanding Officer of the Washington Navy Yard NLSO and the Commanding Officer of the Norfolk NLSO, there is no method other than temporary detail of two officers that satisfies the legal requirements of the Hearing Panel. The Commanding Officers further indicated that a reassignment of the two JAG billets from DC to Norfolk is not difficult to effect. Therefore, legal support should not pose a problem if the re-location is approved.

B. HOSPITAL SUPPORT

Interviews with Hearing Panel members indicate that sometimes the Hearing Panel attendees require immediate on-

site medical consults. Examples of these consults include treadmill tests, degrees of movement tests, physical fitness tests, psychometric tests, magnetic resonance imaging, various lab tests, etc. These consults have been easily arranged at NNMC Bethesda. Is NMC Portsmouth able to provide this same support if the Hearing Panel is re-located? Based on interviews with the Director of Admissions and the Head of Patient Affairs at NMC Portsmouth, the same level of support can be arranged at Portsmouth. Therefore, hospital support should not be a problem if the Hearing Panel is re-located.

C. PEB SUPPORT

In accordance with SECNAVINST 1850.4D [Ref. 5:p. 4-14], a formal Physical Evaluation Board Hearing Panel shall be composed of a Navy line officer, a Marine Corps officer and a Medical Corps officer. There is only one Marine Corps officer and one Navy Line officer currently assigned to the Bethesda Hearing Panel. Therefore, an alternate officer is occasionally required when either of the assigned line officers are not available (leave, sick, etc). SECNAVINST 1850.4D [Ref. 5] further states that alternate officers must be in grade O5 or above, shall be carefully instructed, and must observe one full hearing, including deliberations, before actually sitting as a panel member. The PEB at the

Washington Navy Yard currently provides this required alternate officer. Who will provide this support in Portsmouth? This is potentially problematic although not considered a significant issue. While there is no shortage of O5 or above line officers in the Tidewater area, exactly where these alternate officers would come from if the Hearing Panel were re-located is uncertain. What does seem certain though is that this support, wherever it comes from, should be no additional cost to the Navy. As is the case in Bethesda, these alternate officers are assumed to be able to occasionally stand-in as an alternate at no extra cost to the Navy.

Additionally, the Hearing Panel members indicated that they receive supplemental training from PEB staff. With the PEB and the Hearing Panel being in close proximity, it is a simple matter for the PEB staff member to drive up to Bethesda when this training is deemed necessary. However, the San Diego Hearing Panel, by all accounts, functions at least as well as the Bethesda Hearing Panel without this supplemental training. Therefore, the lack of supplemental training should not be a problem if the Hearing Panel were re-located to Portsmouth.

Currently, all medical records required by the Hearing Panel are sent via guard mail from the PEB to Bethesda as

required. This guard mail involves virtually no additional cost because no postage is required. If the Hearing Panel is re-located to Portsmouth, the medical records would then require postage. However, a review of the Naval District Washington postal contract revealed that the Navy pays a fixed price, regardless of volume, for mail from the DC district. Therefore, there is no additional cost to the Navy for the extra volume if the PEB is forced to mail these medical records with postage to Portsmouth.

IV. SUMMARY

As stated previously, the primary focus of this thesis is to determine whether or not it would be cost effective to relocate the Bethesda Formal Hearing Panel from Bethesda, Md to Portsmouth, Va. OMB Circular A-94 [Ref. 1] dictates that the standard criterion for deciding whether a government program can be justified on economic principles (i.e. cost effectiveness) is net present value.

As depicted in Figure 9, the most likely net present value, considering all incremental costs and savings, of this relocation is \$403,764.45. The net annual savings of relocating the Hearing Panel would be \$72,276.77. Applying a 6.1% discount rate over a 10-year period to this annual amount yields a present value of annual savings of \$529,452.09. Subtracting the initial investment of \$125,687.64 from the net annual savings yields the net present value of the move, \$403,764.45. Furthermore, even considering the least attractive underlying assumptions (see Figure 9 lower limit sensitivity analysis), there is still a positive net present value of the move, \$128,501. It is therefore determined to be cost effective to move the Hearing Panel to Portsmouth, VA.

However, a decision of this type is not solely based on quantifiable evidence. There are **other issues** that must be considered by the decision maker in deciding whether to relocate or not. Some of these issues were discussed in Chapter III and were acknowledged to be potentially problematic. For example, the issue of alternate officers from the Portsmouth area to fill in for absent Hearing Panel members needs to be resolved more thoroughly than is done herein. Also, some of these **other issues** are not discussed in this analysis and many of them may be political in nature. Ultimately, the decision will realistically be based on a consideration of the quantifiable evidence and **other issues** including political consequences.

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